1.

(a)

i. At the Imperative paradigm a program is an explicit sequence of commands and execution of a program means operating the commands one after another.

ii. At the Procedural paradigm, programs are split into named sets of instructions called procedures.

iii. The Functional paradigm makes use of function calls (sometimes composed) that avoid any global state mutation to evaluate expressions.

(b) The procedural paradigm improves over the imperative paradigm by organizing sets of instructions as a named procedure/function that can be called by the program. This attitude adds layers of abstractions and makes it easier to write, read and maintain code.

(c) The functional paradigm improves over the procedural paradigm by modeling computation as an evaluation of mathematical functions and the use of shared state and mutation, which makes formal proves of programs easier so as parallel run of programs and testing.

2.

function sumEven(numbersAsString: string[]): number {

   return numbersAsString.map(x => parseInt(x, 10)).filter(x => x % 2 === 0).reduce((acc, cur) => acc + cur, 0)

}